

DARPA Grand Challenge October 8, 2005

Mr. Ron Kurjanowicz





Preparation Day

October 7





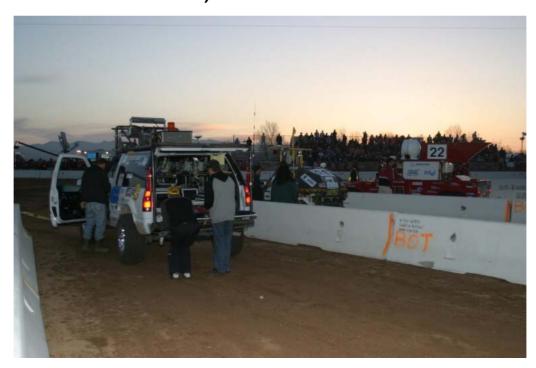
Grand Challenge Event

Saturday, October 8

4:30AM Route CDs distributed

6:15AM Opening Ceremony

6:30AM First vehicle underway (subsequent vehicles at fixed intervals)





Organization

- Control vehicles
 - Each entrant followed by a DARPA control vehicle
 - Safety crew
 - No team members
- Command Operations Center
 - Event control
 - Authorizes vehicle start, tracks vehicles, organizes recovery procedures
- Recovery operations
 - Tow vehicles strategically positioned along the route
 - Remove disabled vehicles from the route
 - Ten ton limit



Control Vehicle Operations

- Vehicle control
 - E-stop: RUN / PAUSE / DISABLE
 - E-stop PAUSE time does not count towards 10 hours
- Safety observers
 - Vehicle passing operations
 - Dangerous situations





Key Challenges

- Stay on the route
 - Shortcuts will not get you there faster
 - Use your sensors
- Avoid obstacles
 - Incidental impacts with obstacles
 - Frequent impacts with obstacles
 - Most dangerous: DARPA inserted obstacles
 - Passing
- Manage speed
 - Route must be completed at or less than 10 hours
 - Vehicle timers
 - Delays
 - Obey the speed limits

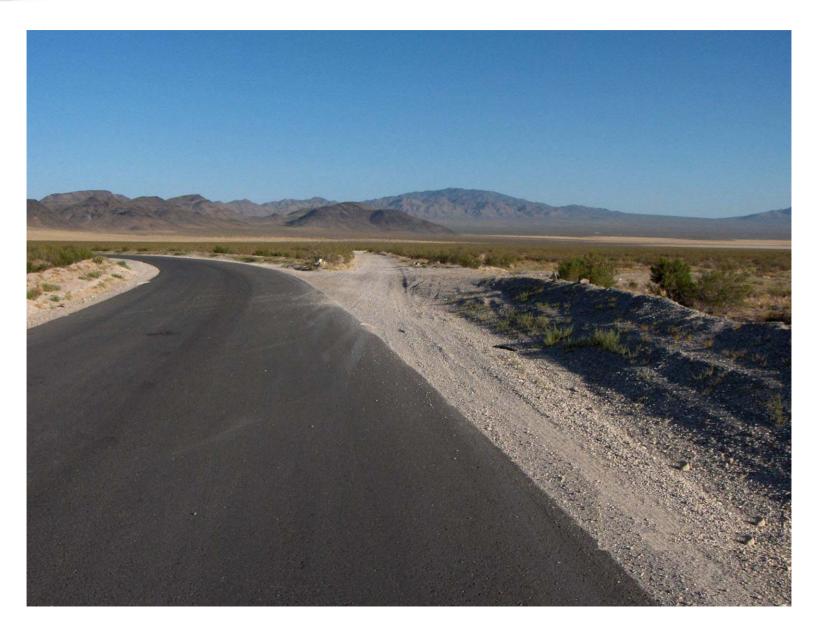


Route





Well-Maintained Roads



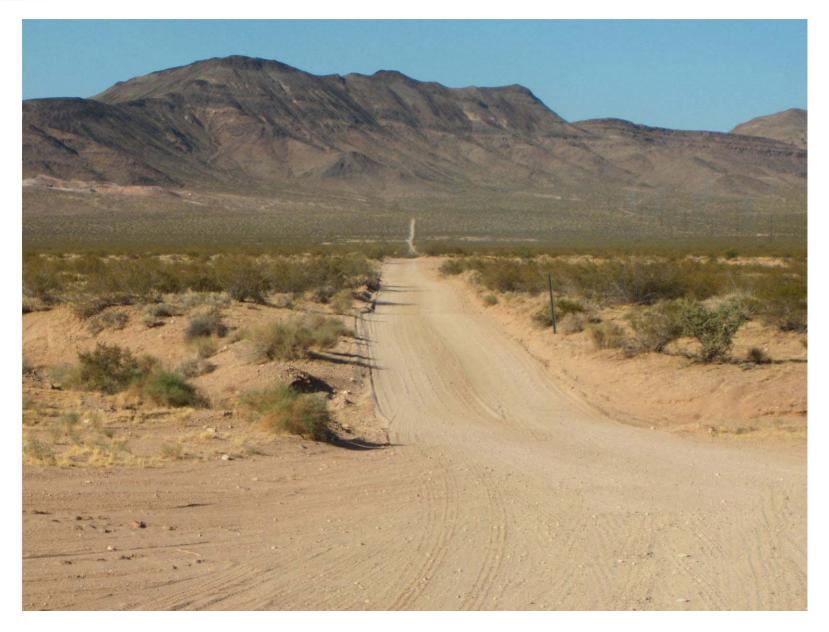


Dirt and Gravel Tracks



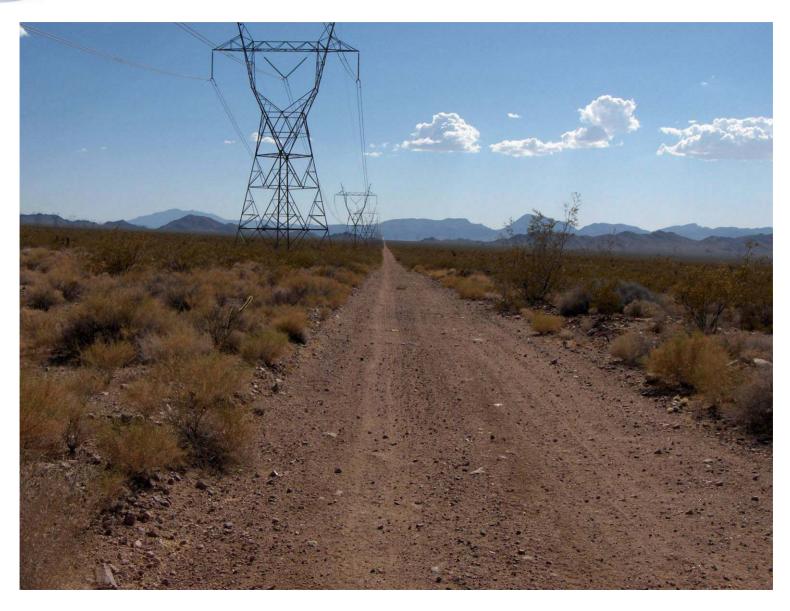


Washboard and Washouts





Utility Towers





Rutted Tracks



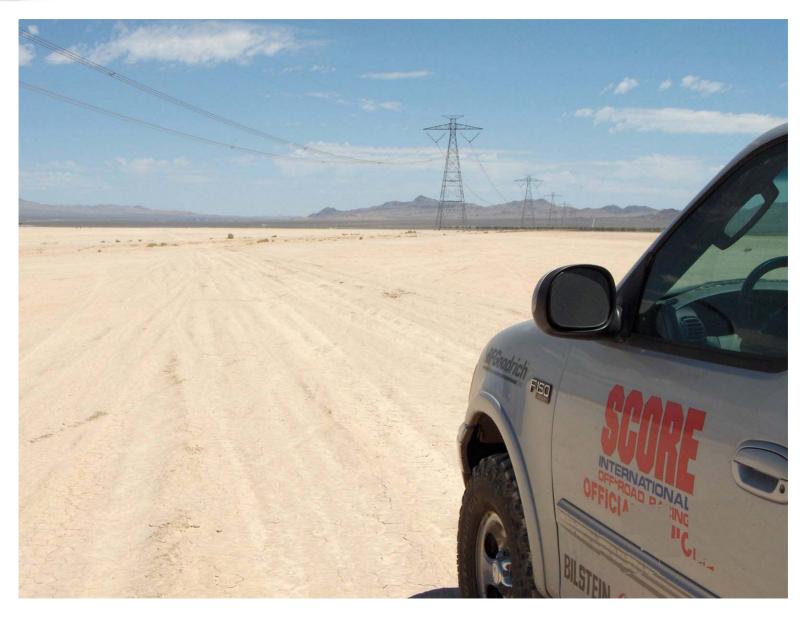


Poorly Defined Berms





Open Areas





Choke Points





Obstacles





Winding Mountain Roads





Steep Drop-offs





Contingencies

Event delay

- If not possible to finish within daylight hours, the event will continue the next day
- October 9 to 15

Two-day event

- If unexpected delay prevents vehicles from finishing the event within daylight hours, Chief Judge will direct overnight procedures
 - Vehicles stopped in place
 - Chase crews stay with vehicles
 - Event continues in the morning
 - Chase crews start vehicles or team members brought to start vehicles



Collecting the Prize

- Shortest time less than 10 hours
- Vehicle inspection at the finish
- Team leader specifies the dispensation of the prize

